Answer on Question #69352 -Physics / Other

A car moving with constant acceleration covers the distance between two points $S = 114$ metres apart in $t = 11$ seconds. Its speed as it passes the second point is $v = 13$ m/s. What is the speed u (to 1 decimal place) at the first point?

Solution

The distance

$$S = \frac{u + v}{2} t.$$

Thus, the speed u at the first point

$$u = \frac{2S}{t} - v = \frac{2 \times 114}{11} - 13 = 7.7 \frac{\text{m}}{\text{s}}.$$

Answer: $7.7 \frac{\text{m}}{\text{s}}$